

## PROTECT SHIELD FOR A RADIATOR

## BACKGROUND OF THE INVENTION

## 1.Field of the Invention:

5           The present invention is related to a protection shield of a radiator and particularly to a protection shield, which is arranged at the radiator to hide and protect heat transfer for protecting from being stained dirt and foreign substance.

## 2.Brief Description of Related Art:

10           Due to progress of technology, application of the computer brings a great deal of convenience to us so that the computer has become indispensable in our daily lives. However, various electrical components in the computer will generate heat while the computer is in use. Especially, the central  
15           processing unit (CPU), which processes mathematic operation, is a component producing heat seriously in case of speed of operation being increased. The conventional way for cooling the CPU is that a radiator with cooling fins is adopted and the bottom thereof is attached to the surface of the chip on the CPU for  
20           the heat generated from the chip being able to be dissipated to the open air via surfaces of the cooling fins of the radiator. Besides, in order to enhance effect of heat dissipation, a fan is provided at the cooling device for dissipating the heat speedily.

25           However, the preceding conventional way is involved in a problem of a clearance, which is formed between the bottom surface of the radiator and the CPU surface due to manufacturing process, increases heat transfer impedance at the two surfaces and results in unfavorable cooling effect. In order to improve  
30           the deficiency, a heat transfer medium has been developed to

be disposed between the bottom surface of the radiator and the surface of the CPU for blocking the clearance and eliminating the heat transfer impedance of air so as to enhance the effect of heat dissipation.

5           There are two kinds of heat transfer media available, thermal tape and thermal grease. The thermal tape is further divided into single side type and double type. The single side type thermal tape can be adhered the bottom surface of the radiator once the detachable paper on the thermal tape is tore  
10 off and the thermal tape is touched to the chip surface of the CPU directly. The double side type thermal tape at one side thereof can be adhered to the bottom surface of the radiator and at the other side thereof can be adhered to the chip surface of the CPU once the detachable papers at the two sides thereof  
15 are tore off. The advantage of utilizing the thermal tape is that the radiator and the CPU can be delivered and packed separately. But, the thermal tape itself is high heat transfer impedance such that a worse effect of heat transfer is provided and it is easy to occur uneven adherence, which is unfavorable  
20 for the effect of heat transfer between the radiator and the CPU.

          The thermal grease is coated on the bottom surface of the radiator and then it put to contact the top of the CPU. The thermal grease has low heat transfer impedance so that a better  
25 heat transfer effect can be obtained. However, the thermal grease is sticky in a state of normal temperature and it is easy to stain with dirt or foreign substance in case of being improperly placed. In this way, the quality of heat transfer is affected considerably so that the thermal grease is  
30 unfavorable for the radiator being delivered and packed. As a

result, the thermal grease has to be used during the radiator and the CPU being assembled on the spot such that it is wasteful for the labor and work hour with less quality of coating.

It can be understood from the preceding description, the thermal tape provides higher heat transfer impedance but worse effect of heat transfer and the thermal grease provides lower heat transfer impedance with better effect of heat transfer but it is inconvenient for delivering and packing the radiator and the CPU once the thermal grease is coated on the radiator or the CPU. Therefore, how to improve the deficiency of the thermal tape and the thermal grease is a subject has to be cared about.

#### SUMMARY OF THE INVENTION

An object of the present invention is to provide a protect shield for a radiator for protecting the heat transfer on the radiator from being accidentally touched or stained with dust.

Another object of the present invention is to provide a protect shield, which is possible for the heat transfer medium on the radiator being delivered and packed conveniently.

In order to achieve the foregoing objects, the protect shield for a radiator according to the present invention has a shield body with a bottom and four lateral sides thereof defining a receiving space for receiving the heat transfer medium coated on the radiator. Further, the shield body has a support unit projecting from the inner surface at the bottom of the shield body for putting up the heat transfer medium so as to prevent the heat transfer medium from being accidentally touched and being stained with dust.

The detail structure, the applied principle, the function and the effectiveness of the present invention can be more fully understood with reference to the following description and accompanying drawings, in which:

5        Fig. 1 is a disassembled perspective view of a protect shield for a radiator according to the present invention;

      Fig. 2 is a perspective view of the protect shield shown in Fig. 1; and

      Fig. 3 is a sectional view of Fig. 2.

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#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figs. 1 and 2, a preferred embodiment of a protect shield for a radiator according to the present invention is illustrated. The protect shield is used for covering a surface 21 of the radiator 2 so as to protect a heat transfer medium 3 (i.e. the thermal grease) coated on the surface 21. The protect shield has a shield body 1, which is composed of a bottom part 11 and four lateral walls 12, to define a receiving space 13 for receiving and covering the radiator 2. The lateral walls 12 are provided with an elastic urging part 14 respectively so that the lateral walls 12 can be fixedly attached to the radiator by way of the elastic urging part 14. Further, the shield body 1 at the inner surface of the bottom 11 thereof has a support unit 15 for supporting the surface 21 of the radiator 2.

      The heat transfer medium 3 is a kind of sticky material like the thermal grease, which is evenly coated on the surface 21 of the radiator 2 at the spot contacting with the CPU by way of screen printing or painting. Then, the shield body 1 is used to hide and cover the heat transfer medium 3 so as to allow the

heat transfer medium 3 being disposed in a protect space 16  
formed by way of the support unit 15 putting up the surface 21.  
In this way, the radiator 2 can be delivered and packed easily  
and can prevent the heat transfer medium 3 from being stained  
5 or accidental touch with the foreign substance.

It is appreciated that the protect shield for a radiator  
according to the present invention can solve the problem of  
delivering and packing resulting from the traditional heat  
transfer medium being coated on a contact area between the  
10 radiator and the CPU.

While the invention has been described with referencing  
to a preferred embodiment thereof, it is to be understood that  
modifications or variations may be easily made without  
departing from the spirit of this invention, which is defined  
15 by the appended claims.

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